

II. INFLATED ESTIMATES OF GAINS IN INTERLATA MARKET FROM BOC ENTRY

61. In my original affidavit I stressed that, all other things equal, there were likely benefits from earlier authorization of BOC entry. A BOC in its region enjoys certain advantages over many other potential entrants into interLATA services, notably its established reputation and relations with virtually all customers. These advantages may enable it to economize on retailing costs by offering integrated services, and to provide consumers with the benefits of one-stop shopping. And since long-distance competition is not perfect, BOC entry could further benefit consumers by forcing down IXCs' margins.

62. As explained in Part I of this affidavit, however, the existence of potential benefits from BOC entry does not imply that early authorization is desirable on balance, as one also must consider the potential costs from delayed opening of local markets. I now wish to address two issues raised by BOC experts: (1) that by virtue of also providing exchange access, a BOC has stronger incentives than do other interLATA competitors to reduce interLATA prices, because stimulating calling volume would also increase its profits from *access*; and (2) that, for this and other reasons, the benefits of BOC entry are likely to be enormous. For instance, Professor Jerry Hausman, in his Michigan Declaration on behalf of BellSouth, forecasts nationwide benefits of \$6.7 billion annually to residential consumers alone (Hausman 1, ¶ 13); and Professor Paul MacAvoy "conservatively" projects \$1.9 billion annually to long-distance consumers (residential and business) in just Ameritech's region (MacAvoy Michigan Reply Aff., ¶ 35).

63. Section A below examines BOC incentives to cut interLATA prices, demonstrating that the analytic basis for expecting large reductions of the magnitude predicted by Professors Hausman or MacAvoy is dubious. Moreover, the same argument Professor Hausman uses to justify BOC entry—reduction of "double marginalization"—also supports a standard that speeds up local competition. Section B shows that the evidence from interLATA entry by two major non-BOCs, SNET and GTE, also does not support dramatic gains of the size projected by Professors Hausman and MacAvoy.

A. BOCs' "Unique Incentives" to Cut Prices Are Far Weaker Than Asserted, and Such Incentives Do Not Support Early BOC Entry If That Would Retard Local Competition

1. Increasing Access Profits by Stimulating InterLATA Minutes Through Reducing "Double Marginalization"

64. Professor Hausman argues that a BOC has far stronger incentives to cut prices in an imperfectly competitive interLATA market than do existing IXC or any interLATA entrants that are not integrated into providing exchange access services. Each additional long-distance minute increases access use and thus BOC profit from access. Since this consideration is absent for providers that lack their own access facilities, a BOC's incentive to cut long-distance prices is stronger.

65. It is worth noting at the outset that Section 272 of the Act requires a BOC to charge to an affiliate or to impute to itself an access charge no lower than what is charged to IXCs. This requirement would seem to restrict BOCs' ability to behave in the manner stipulated by Professor Hausman and some other BOC experts. Nevertheless, let us consider this argument as it relates to BOC *incentives*. While there is an element of validity to the argument, one should recognize its serious limitations: (a) IXCs and other carriers would have similar pricing incentives if they were able to provide *local* services, an ability that the Act aims to ensure by promoting local competition; (b) in the absence of significant local competition, BOCs would have incentives to attempt access discrimination against long distance carriers (raising their costs of accessing local networks or degrading their quality), for purposes of *raising* interLATA prices; and © even if such behavior could be adequately prevented, BOC incentives to cut prices would be considerably less than claimed, since BOC margins on access are falling and—according to BOC experts—are already lower than interLATA retail margins, margins that would be threatened by aggressive BOC price cutting.

66. *Incentives for others to vertically integrate into local services.* The argument that BOCs would have uniquely powerful incentives to cut interLATA prices by virtue of being vertically

integrated overlooks the incentive of others, such as IXC's, to vertically integrate into the provision of exchange access. Like BOC interLATA entry, such integration also could eliminate the "double marginalization" which arises today because access is priced well above marginal cost (and because the interLATA market is not perfectly competitive). Just as a BOC, if allowed interLATA entry, would recognize the positive impact on its access business from stimulating interLATA output, so would an IXC if it could integrate into providing exchange access. Indeed, it is inaccurate to couch the "double marginalization" distortion as arising solely due to imperfect competition in interLATA services. Rather, the distortion arises whenever non-integrated and imperfectly competitive firms at *both* stages—exchange access and interLATA retail—choose their prices ignoring the beneficial impact that a price cut would have on sales and profits at the other stage. One could just as accurately portray "reduction of double marginalization" as requiring entry by IXC's into exchange access to reduce inflated access prices. The key to reducing double marginalization is vertical integration, in either direction, and firms would have incentives to do so if they had the ability.

67. The *ability* of IXC's and other non-BOCs to accomplish such vertical integration, however, depends heavily on obtaining adequate cooperation from the BOC's in providing interconnection to and unbundling of their local networks. Consequently, a consideration of double marginalization does not necessarily suggest a more lenient standard for BOC entry, in large part because such a standard is less likely to elicit adequate BOC cooperation. Moreover, to stress a BOC's unique ability to operate as an integrated provider would be to concede that the prospects for local competition in access are not rosy, a far cry from positions taken by BOC's in various proceedings.

68. ***BOC incentives to attempt non-price access discrimination against IXC's.*** The argument that the BOC's would like to see a lower average interLATA price than currently prevailing assumes that a BOC can compete only by lowering price, not by increasing competitors' costs or degrading their quality through network access discrimination. (It also assumes, as discussed shortly, that a BOC would not capture a large share of the interLATA market.) Since the average elasticity of demand for long-distance services is estimated to be well below 1 (0.7 is a consensus figure), interLATA industry revenue would be increased by raising price and accepting the reduction in output, hence profits would also be increased (as costs would decrease due to reduced output).

Thus, an integrated monopolist over both access and downstream long-distance sales *would prefer to raise, not to lower, the average interLATA retail price* from today's level. (A perfect cartel of IXC's—if it existed as some BOC experts claim—would prefer an even higher price, since IXC's do not collect access profits and thus perceive higher marginal cost of offering interLATA service than would an integrated monopolist that would collect such profits.)

69. Following this logic, a BOC entering interLATA retail services and that was capable of expanding its own output rapidly would have incentives to nudge the industry towards the higher monopoly price, by using technological access discrimination to inflate competitors' costs or degrade their quality, thus enabling the BOC to raise its own price. (It would have a similar incentive also for purposes of shifting sales from competitors to itself if competitors were earning supra-competitive margins, but the current discussion does not require the existence of such margins.) Hausman's contrary argument, that a BOC would prefer *lower* prices, assumes away the ability of a BOC to undermine IXC's through such access discrimination. (It also assumes that a BOC would capture only a relatively small share of the IXC market unless it cut price vigorously, an assumption questioned below.)

70. My affidavit noted that regulatory and other safeguards can render the threat to IXC's' access arrangements tolerable, at least in the short run (Schwartz Aff., ¶ 14). However, if local competition fails to develop exchange access alternatives, then BOC interLATA entry is likely, over time, to pose a growing threat to the ability of IXC's to compete (Schwartz Aff., ¶ 160), since IXC's' access needs will change over time and preventing discrimination in the establishment of new access arrangements is considerably harder than preventing the degradation of established arrangements. In the longer run, therefore, the BOCs would have strong incentives and perhaps also the ability to raise interLATA prices by impeding IXC's' access to local networks.²²

71. ***Profit from BOC interLATA entry may come largely from diverting sales from IXC's than from expanding access use.*** Assume for the sake of argument that a BOC would not be able to raise

²² For these reasons, Professor Hausman, in his Declaration on behalf of BellSouth in South Carolina, mischaracterizes my initial affidavit somewhat when he writes: "Indeed, Professor Marius Schwartz . . . concluded that no competitive problems are likely to exist from BOC entry into long distance. . . ." (¶ 41).

competitors' costs of providing interLATA services via access discrimination, as discussed above. BOC incentives to cut retail interLATA prices aggressively would still be more muted than suggested by BOC experts. This is because a BOC's increase in profit from expanding access minutes is likely to be considerably smaller than its profit from retail long-distance sales, hence BOC behavior is likely to be guided primarily by the latter rather than by access profits.

72. To see this, let us do some simple calculations using Professor Hausman's own figures from his Michigan Declaration on behalf of BellSouth. He estimates that BOC entry would reduce interLATA price to residential customers by about 18%. To be generous to Hausman, assume that this reduction would apply also to business customers.²³ Using his 0.7 estimate of long distance demand elasticity an 18% price reduction implies an increase in interLATA minutes of about 12.6%. The revenue to all BOCs from usage-sensitive access charges in 1995 was about \$16.7 billion (Schwartz Affidavit, Table 1). With an unchanged access price, the implied increase in access revenue from the 12.6% increase in minutes is \$2.1 billion. Hausman's figure for the *margin* of access above cost, 3 cents/minute, puts the access margin at about half of the average national access price in 1995. Thus, the implied increase in BOC annual *profit* from increased access minutes is less than \$1.05 billion.

73. By comparison, let us apply Hausman's projected price reduction of 18% to the entire interLATA market and assume that the BOCs market share within a few years would be 20%.²⁴ The BOCs' resulting interLATA retail revenue would be \$7.1 billion.²⁵ The BOCs' profit from this \$7.1

²³ In fact, the likely decrease is far smaller for business customers, as well as for many high volume residential customers, since competition for such customers is generally acknowledged to be stronger, leaving far less room for price reductions than in the case of low volume residential customers.

²⁴ For example, Professor Schmalensee cites a Yankee Group study indicating that BOCs could capture 10-15% of the market within 18 months of entry (Schmalensee Declaration on behalf of BellSouth in the South Carolina application, at paragraph 21). Within 18 months of its interLATA entry in 1996, GTE has already captured close to 10% of presubscribed long distance lines in their service areas, and without being a vigorous price competitor. SNET is said to have captured about 30% of long-distance lines and about 20% of revenues.

²⁵ Long-distance revenue net-of-access in 1995 was \$50 billion (Schwartz Affidavit, Table 1). Since only 77% of interLATA minutes originate in BOC regions, suppose that so does 77% of the revenue, or \$38.5 billion. Assuming Hausman's price reduction of 18% and output increase of 12.6% due to BOC entry, the new revenue would be about 92% of the old figure ($0.82P \times 1.126Q = 0.92PQ$), or \$35.4 billion. A 20% share of this is \$7.1

billion in interLATA retail revenue is likely to exceed the extra \$1.05 billion profit from increased access minutes. For the ranking to be reversed, two things would have to hold: (a) typical IXC costs of providing interLATA services would have to be high relative to revenues; *and* (b) the BOCs' cost of providing interLATA retail services would have to be not significantly lower than those of a typical IXC. Condition (a) contradicts claims of certain BOC experts (such as Professor MacAvoy) that IXCs earn enormous profits; condition (b) contradicts BOC claims that their entry would realize substantial economies of scope from joint provision of local and interLATA services. Thus, if the BOCs' increased profit hinged primarily on expanded access usage, the implied conditions would undermine other BOC arguments for the great benefits that their interLATA entry would deliver. However, I believe that, even today, profit from BOC interLATA entry would come mainly from interLATA retail revenues. More importantly, looking ahead the profit contribution from BOC interLaTA retail revenues is likely to outweigh considerably the additional profit from expanded access minutes. This is because the FCC's Access Charge Reform Order will reduce usage sensitive (i.e., per minute) access charges substantially over the coming years.²⁶

74. The key point in stressing that the bulk of BOC interLATA profits are likely to come from retail revenues rather than from increased access minutes is this: an increase in BOCs' share of interLATA revenues might be achieved largely by *diverting* output away from IXCs *not by expanding industry output*. Therefore, it need not hinge on reducing industry price significantly; and hence a BOC may not have strong incentives to cut interLATA prices.²⁷

billion.

²⁶ For example, see the May 8, 1997, presentation of Professor Joseph Farrell, at that time Chief Economist at the Commission. Average usage-sensitive charges affected by the Order were predicted to fall from 2.8 cents per minute at each end of an interstate call to approximately 1.2 cents per minute at the terminating and approximately 1.4 cents per minute at the originating end by January 1, 1999.

²⁷ Indeed, if a BOC could capture a sufficient share of the interLATA market without cutting price, it would seek a higher price than prevailing today. This follows from the earlier discussion showing that an integrated monopolist's preferred long-distance price exceeds the current average interLATA price.

2. Disrupting an Allegedly Non-Competitive InterLATA Oligopoly

75. The extent of price reductions (if any) following BOC entry will depend on the competitive interactions in the interLATA market. One view offered by Bell affiants is that IXC's are tacitly colluding to some degree. This view has been espoused repeatedly by Professor Paul MacAvoy. The hypothesis of perfect collusion is inconsistent with estimates of long-distance demand elasticity of 0.7, that is, significantly less than 1; as noted previously, a perfect cartel in such case would have raised price in order to increase revenue and profit. However, assuming for the sake of argument that IXCs are engaging in imperfect tacit collusion, it is not obvious why the addition of one player should destroy such collusion. An alternative outcome is that IXCs would choose to accommodate the BOC. Indeed, there is evidence that the BOCs would like to avoid a price war, including the fact that BellSouth has announced that its prices will be at least 5% below AT&T's, but has not promised the 15-20% price cuts that Professor Hausman predicts.²⁸

76. Dr. Crandall and Professor Waverman, while not claiming that IXCs are colluding, argue that much of IXCs' currently high margins are being dissipated by wasteful non-price competition such as advertising, and that BOC entry would reduce margins and therefore also the incentive to engage in wasteful non-price competition. Putting aside the question of just how much of the non-price expenditures are truly wasteful as opposed to valuable to consumers, it is again not obvious why adding a competitor would so drastically alter the nature of competition.²⁹

77. I am not suggesting that BOC entry will yield no price reductions. I expect price reductions, and said so in my affidavit. However, the analytical basis for expecting *dramatic* reductions is weak, and I therefore believe that any price reductions would be considerably more modest than projected by some BOC experts such as Professors Hausman or MacAvoy.

²⁸ Brief in Support of Application by BellSouth for Provision of In-Region InterLATA Services in South Carolina. September 30, 1997, at 4, 78.

²⁹ Indeed, conceivably even more would be spent on advertising and other forms of non-price competition in order to "be heard" above the increased noise.

B. Other Reasons Why Estimates of Gains From BOC Entry Are Inflated

78. Professor Hausman's and Professor MacAvoy's figures are likely to overstate the benefits for several important additional reasons, beyond those discussed in Section A above.

1. Not All InterLATA Traffic Originates in BOC Regions

79. Professor Hausman assumes that BOC entry would bring about a price reduction of about 18% and applies this figure to *all* interLATA revenues from residential customers. But in 1995 only 77% of all interLATA minutes originated in BOC service areas (Schwartz Affidavit, ¶ 31). A BOC's impact on interLATA competition is likely to be far less outside its service regions, e.g., in regions served by other LECs such as GTE or SNET; moreover, the BOCs already are allowed to offer interLATA service originating out-of-region.³⁰ It is therefore inappropriate to extrapolate whatever interLATA price reduction one expects to emerge in a BOC's region—about 18% according to Hausman—also to regions served by non-BOC LECs. Making this correction would deflate Hausman's projected benefits to consumers by about one quarter—even assuming, counter factually, that his projected percentage price reduction in region is accurate.³¹

2. High-Volume Customers Already Enjoy Substantial Competition

80. Second, Professors Hausman and MacAvoy overestimate the scope of the likely price reduction in BOC regions. Even if BOC entry might plausibly yield price reductions of the order of

³⁰ The fact that BOCs have made remarkably few attempts to enter out of region also casts doubt on claims by some BOC experts that interLATA markets are so hugely profitable today.

³¹ It is certainly true that when evaluating the benefits from increased local competition made possible by a suitable § 271 entry standard one also should focus primarily on BOC regions, not on those served by other LECs. But my affidavit did not attempt to present quantitative estimates of such gains extrapolated to all regions, and therefore is not subject to the criticism that I too "over-counted" the benefits from local competition.

15% to *low-volume* residential customers that do not participate in IXC's discount plans, the majority of interLATA *expenditures* are made by higher-volume customers who do participate in discount plans and for whom competition already is more intense. For example, AT&T already offers 10 cents/minute anytime, anywhere with a relatively low flat monthly fee.³² High-volume residential customers subscribing to such plans are likely to see considerably smaller price reductions than those assumed by Professor Hausman.

3. Lessons from the Experiences of SNET and GTE

81. *Extent of price reductions.* The significant shares of interLATA residential customers migrating to SNET and GTE in their regions suggest the potential for welfare gains from BOC interLATA entry. However, the 17-18% average residential rate reductions predicted by Professor Hausman based on his interpretation of the SNET and GTE experiences overstates this potential substantially, for at least two reasons.³³

³² A \$25-\$50/month residential customer on SNET's best rate plan pays 12 cents/minute for anytime, interstate calling. (The same SNET customer would have paid more in the January 1997 time frame used in Professor Hausman's affidavit because this favorable rate schedule was not available at the time.) An MCI customer with the same bill and "anytime" calling plan pattern also pays 12 cents/minute (less on Sundays); an AT&T customer between pays 11-13 cents/minute. For off-peak calling, Sprint's dime-a-minute rates beat SNET's rates for all but the largest residential customers (to whom SNET offers a dime-a-minute), and LCI's 9 cents/minute beats both of them.

³³ As explained shortly, even the price reductions projected based on the SNET record are exaggerated. However, Professor Hausman does not offer good support for his claims that GTE has priced competitively to the same degree as SNET. In fact, available evidence indicates that GTE has not priced aggressively against the major IXCs, but relied more on its in-region brand name recognition. For example, GTE's initial entry pricing strategy was simply to offer volume discounts of 10% off competitors' basic rates for bills of \$10/month and 25% for bills of at least \$25/month. (See Merrill Lynch, Telecom Services - Long Distance, August 12, 1996.) These discounts are comparable to the volume discounts off basic rates that customers could already get from AT&T. GTE today has only two long distance rate plans: one is the flat rate of 14 cents/minute under Total Call, which is only one cent below AT&T's 15 cent flat rate, and is above AT&T's 10 cents flat rate and MCI's 12 cent flat rate available to users who meet some basic volume requirements or pay a monthly fee. The other is the Easy Savings plan, with discounts from AT&T's basic rate for customers with bills of at least \$10/month and 25% for bills of at least \$25/month. As noted, such customers can obtain similar discounts from AT&T.

82. First, Professor Hausman selectively focuses on certain relatively high-priced AT&T rate plans and fails to consider lower rate plans already offered by AT&T and other IXC's. These low rate plans should induce customers to migrate from the particular, relatively high-priced AT&T schedules that Professor Hausman selected for his LEC/AT&T rate comparison, even absent the availability of SNET or GTE interLATA service.³⁴ In fact, for the *off-peak* callers that make up the bulk of the residential market, SNET and GTE do *not* offer the best interLATA rates available in their respective territories, *for any customer calling volume*.³⁵ For *on-peak* calling, competing carriers also have lower rates than GTE *for most service levels*, while the comparison of their rates with those of SNET's is mixed.³⁶

83. Second, although Hausman's submissions do not state how he weighted the rate schedules that he does compare, his 17-18% projected average price reduction appears to be based on initial average prices that are computed by weighting prices in discount and non-discount plans according to the number of customers in each. This ignores the fact that customers in discount plans tend to be the heavier users and account for a much higher share of both minutes and total expenditure.

84. This is not to deny that some SNET and GTE customers may well be enjoying better rates

³⁴ In his submission in the present BellSouth proceeding, Professor Hausman does mention two of the more competitive standard AT&T calling plans. However: (a) he only compares the least favorable of these with SNET rates; (b) he makes the unrealistic assumption that the average call duration is only four minutes (thereby exaggerating the impact of SNET's shorter billing increments); and (c) he also applies discounts to the SNET rates that, according to SNET's customer representative, are not available on that schedule.

³⁵ As mentioned, GTE's best off-peak rate plan is a straight 14 cents/minute, anytime rate. For off-peak callers, AT&T, Sprint, and LCI all offer rates that beat GTE's by 30-35%. Sprint's and LCI's respective off-peak rates of 10 cents and 9 cents/minute dominate SNET's offers. (Sprint rebates a further 10% off the bill for customers spending at least \$25/month who maintain service for a year.) AT&T's 10 cents per minute off-peak rate matches SNET's.

³⁶ MCI beats SNET's best on-peak offer for customers with lower calling volumes. Sprint's, AT&T's, and LCI's respective off-peak rates of 10 cents, 10 cents, and 9 cents/minute dominate SNET's offers. (Sprint rebates a further 10% of the bill for customers that maintain service for a year.) For customers using under \$25 per month, MCI's 12 cents/minute anytime beats SNET's 15 cents/minute anytime rate. At calling volumes over \$50 per month, SNET's rates are the best of the major players' *standard* offers for callers with heavy on peak use, with the advantage around 10% at \$50 per month; less at greater calling volumes. However, SNET's penetration at high calling volumes is disproportionately small, perhaps because of the competitive importance of IXC's promotional calling plans offering very substantial additional savings at these calling volumes.

as a result of interLATA entry by these LECs. A likely benefit of in-region interLATA entry by the incumbent LEC is its marketing access to its broad customer base. Incumbent LECs that marketed attractive interLATA rates would over time win some customers from incumbent IXCs, improving these customers' welfare directly. Indirectly, such ILEC offers ultimately would be a factor in inducing incumbent IXCs to improve their own offers or speed up the penetration of their more attractive current calling plans among their customer base. However, these effects are not measured well by Professor Hausman's comparisons; he does not distinguish the effect of ILEC entry from the effects of rate schedules already on the market.

85. *Increased competition even absent BOC entry.* Competition has been increasing in long-distance services to a significant extent even in the absence of BOC entry. AT&T's market share erosion has accelerated over the over the past 3 years as MCI, WorldCom, and particularly the smaller carriers have gained market share.³⁷ AT&T and its rivals have introduced residential rate plans that have reduced generally available rates.³⁸ Various Wall Street analysts refer to long-distance service as becoming increasingly a "commodity," and cite increased competitive pressures from resellers and smaller carriers.³⁹ Thus, it is misleading to argue that prices with BOC entry would be lower than without it by about 15-20% *in steady state*.⁴⁰ Rather, BOC entry would accelerate and

³⁷ See FCC "Long Distance Market Shares " Chart 2 and preceding tables, October 10 1997.

³⁸ Nonpromotional plans available to all residential customers include *One Rate Plus* (\$4.95 per month plus 10 cents/minute, anytime [AT&T]); *Simple Rate* (10 cents/minute, 7pm-7am, weekends; 25 cents/minute, 7am-7pm [AT&T]); *MCI One Rate Plan* (12 cents/minute, anytime, for customers using more than \$15 a month, and 15 cents/minute, anytime, for smaller customers; 5 cents/minute on Sundays for both type of customers); *Sprint Sense* (10 cents/minute, 7pm-7am, weekends; 25 cents/minute, 7am-7pm); *The LCI Difference* (\$3 per month, waived if the bill is more than \$15; 9 cents/minute, 7pm-7am, weekends; 15 cents/minute, 7am-7pm).

³⁹ See, for example, Merrill Lynch, Telecom Services - Long Distance, 12 August, 1996.

⁴⁰ For example, Professor MacAvoy lists "conservative" estimates of annual consumer benefits in Michigan of \$0.4 billion (\$1.9 billion for all of Ameritech's region) and puts the present value of this benefit stream at \$5.5 billion (\$23 billion for all region). This presumes that BOC entry gives a *permanent* increase in competition, as opposed to merely accelerating its evolution, as it presumes that consumers would get an additional \$0.4 billion *each year* with Ameritech entry than without it (MacAvoy Michigan Reply Affidavit, July 2, 1997, p. 5).

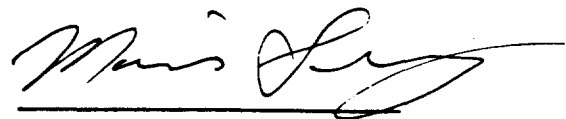
perhaps deepen the already intensifying competition. Barring consolidation, this competition would bring interLATA prices lower even without BOC entry. The added reduction in prices that hinges on BOC entry is therefore likely to diminish over time.

III. CONCLUSION

86. My purpose in this affidavit is not to engage in skirmishes over quantification of the exact benefits and costs of BOC entry, an exercise that I view as quite speculative. Rather, my purpose is twofold. First, I want to suggest—based on the analysis of Part I—that there is a broad range of plausible assumptions under which the gains from increased local competition will comfortably outweigh any likely loss due to delayed BOC interLATA entry. Second, I want to identify the numerous and serious exaggerations in some of the figures that have been touted.

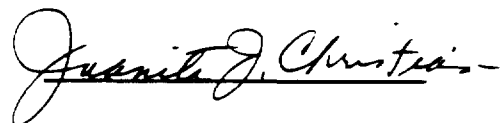
87. The Section 271 entry authority is a key, if not the key, tool for prying open local markets. Therefore, it is also the key to ensuring that all providers are able to compete on an equal footing in offering integrated services that require the now-monopolized local inputs and services. The Department of Justice's Open Local Market Standard strikes a good balance between the costs and benefits of delaying BOC entry as needed to accomplish the competition goals of the Telecommunications Act, and is likely to accelerate considerably the development of competition in local and in integrated services compared with a more lax standard. It need not impose an onerous delay in BOC entry. And it ultimately will result in less intrusive regulation than would a policy that authorizes BOC entry prior to full implementation of the main new systems required for local competition and instead counts on regulators to disentangle the mess later.

I hereby swear, under penalty of perjury, that the foregoing is true to the best of my knowledge and belief.



Marius Schwartz

Subscribed and worn before me this 3 day of Nov. 1997.



Notary Public

Notary Public, State of Nevada, No. 00000000

MARIUS SCHWARTZ

Home: 3710 Warren Street, NW
Washington DC 20016
tel (202) 363-1896

Work: Georgetown University
Department of Economics
Washington DC 20057
tel (202) 687-6112
fax (202) 687-6102
e-mail schwarm2@gunet.georgetown.edu

EDUCATION

University of California, Los Angeles: Ph.D. in Economics, September 1982
University of California, Los Angeles: M.A. in Economics, March 1978
London School of Economics: B.Sc. in Economics (1st Class Honors), August 1976

PROFESSIONAL EXPERIENCE

Georgetown University, Department of Economics

Professor, June 1993–present
Associate Professor, August 1987–May 1993
Assistant Professor, January 1983–July 1987 (part time in Fall 1982)

Director of Graduate Studies: Spring 1993–Spring 1995

Undergraduate Courses Taught:

Antitrust
Industrial Organization
International Economics
Macroeconomic Theory
Mergers & Corporate Control
Microeconomic Principles
Topics in Competition and Regulation

Graduate Courses Taught:

Industrial Organization
Macroeconomic Theory I
Macroeconomic Theory II
Monetary Policy
Microeconomics: special course in Pew
Freedom Fellows Program

Council of Economic Advisers, Executive Office of the President

Senior Economist, June 1995–May 1996 (part-time consultant April & May 1995 and June 1996).

Served as the senior economist principally responsible for antitrust, regulated industries, and other industrial organization matters. Work included: 1996 Telecommunications Act; competition in international satellite services; competition in the electric utility industry; reforming the patent and trademark office; intellectual property rights; international trade disputes; health care.

U.S. Department of Justice, Antitrust Division

Consultant, June 1996–present

Economist (part time), January 1983–May 1995
Economist (full time), October 1980–December 1982

Regulatory

Analyzed various competitive issues posed by Bell Company entry into long-distance telecommunications services and submitted affidavit to Federal Communications Commission on behalf of Justice Department.

Testimony

Presented expert testimony to courts in successful challenges of merger and of consent decree.

Mergers

Investigated mergers in several industries and helped to design appropriate relief.

Business Practices

Worked on vertical-restraints cases (tying, exclusive dealing, resale price maintenance, exclusive territorial arrangements) and horizontal-conduct cases (collusion and predation).

Legislation, Congressional Matters, Division Reports

Provided input to Antitrust Division's Merger Guidelines (1992) and Vertical Restraints Guidelines (1984). Helped draft Division comments on various Congressional legislation and responses to inquiries in several areas including price discrimination and dealer termination.

Cooperation with Foreign Competition Authorities

Interacted with competition officials from several countries and agencies. Helped comment on following documents: Canadian Fair Trade Commission's guidelines on predatory pricing, and on price discrimination; Japanese Fair Trade Commission's guidelines on distribution systems, on sole import distributorships, and on joint R&D; Korean Fair Trade Commission's guidelines on unfair trade practices in international agreements; OECD papers on predatory pricing, on competition policy and franchising, and on interaction between trade and competition policies.

Other Professional Experience

Senior Advisor, The Brattle Group, Economic, Environmental & Management Counsel, Cambridge, MA and Washington DC, November 1996-present.

OECD: Lecturer in Seminar on Vertical Restraints for competition officials from Czech Republic, Hungary, Poland, and Slovakia in Cracow, Poland, November 20-22, 1995.

Consultant in private antitrust and regulatory matters.

ILADES: Participated in designing and teaching a short course in industrial organization to policymakers and executives in Santiago, Chile, June 1994.

Pew Freedom Fellows Program: Taught short course in microeconomics to twenty Fellows from transition economies, annually, January 1993–present. (Fellows hold middle-level or upper-level positions in government and private business.)

Center for Economic Development, Slovakia: Academic Advisory Board.

World Bank: Consultant.

Abt Associates/USAID: Advised Government of Zimbabwe in Harare on formulating antitrust law, summer 1993 (consultant to Abt, work funded by USAID's Implementing Policy Change Project).

LANGUAGES

French, Hebrew, Romanian (speak and read all three fairly well; write French and Hebrew adequately)

HONORS

U.S. Department of Justice, Antitrust Division: Special Achievement Awards
Brookings Institution: Research Fellow, 1979-80
University of California, Los Angeles: Earhart Fellowship, 1977-78
University of California, Los Angeles: Regents Fellowship, 1976-77
London School of Economics: Premchand Prize in Monetary Economics, 1976

PUBLICATIONS

Refereed Journals

- "A Quality-Signaling Rationale for Aftermarket Tying," *Antitrust Law Journal*, vol. 64 (Winter 1996): 387-404 (with Gregory J. Werden).
- "The Non-Existence of Pairwise-Proof Equilibrium," *Economics Letters*, vol. 49 (1995): 251-259 (with R. Preston McAfee).
- "Equity as a Call Option on Assets: Some Tests for Failed Banks," *Economics Letters*, vol. 48 (1995): 389-397 (with Behzad Diba and Chia-Hsiang Guo).
- "Parallel Imports, Demand Dispersion, and International Price Discrimination," *Journal of International Economics*, vol. 37 (November 1994): 167-195 (with David Malueg).
- "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity," *American Economic Review*, vol. 84 (March 1994): 210-230 (with R. Preston McAfee).
- "Preemptive Investment, Toehold Entry, and the Mimicking Principle," *RAND Journal of Economics*, vol. 22 (Spring 1991): 1-13 (with David Malueg).
- "Patent Protection through Discriminatory Exclusion of Imports," *Review of Industrial Organization*, vol. 6 (No. 3, 1991): 231-246.
- "Third-Degree Price Discrimination and Output: Generalizing a Welfare Result," *American Economic Review*, vol. 80 (December 1990): 1259-1262.
- "Investments in Oligopoly: Welfare Effects and Tests for Predation," *Oxford Economic Papers*, vol. 41 (October 1989): 698-719.
- "Entry Deterrence Externalities and Relative Firm Size," *International Journal of Industrial Organization*, vol. 6 (June 1988): 181-197 (with Michael Baumann).
- "The Competitive Effects of Vertical Agreements: Comment," *American Economic Review*, vol. 77 (December 1987): 1063-1068.

- "The Nature and Scope of Contestability Theory." *Oxford Economic Papers*, vol. 38 Supplement (November 1986): 37-57.
This issue of the journal was published in parallel as *Strategic Behavior and Industrial Competition*, Morris et al. Eds., Oxford University Press, 1986.
- "The Perverse Effects of the Robinson-Patman Act." *Antitrust Bulletin*, vol. 31 (Fall 1986): 733-757.
- "Divisionalization and Entry Deterrence." *Quarterly Journal of Economics*, vol. 101 (May 1986): 307-321 (with Earl Thompson).
- "Illinois Brick and the Deterrence of Antitrust Violations." *Hastings Law Journal*, vol. 35 (March 1984): 629-668 (with Gregory Werden).
- "Contestable Markets: An Uprising in the Theory of Industry Structure: Comment." *American Economic Review*, vol. 73 (June 1983): 488-490 (with Robert Reynolds).

Monographs, Book Reviews, and Other Publications

- "Telecommunications Reform in the United States: Promises and Pitfalls," in Paul J.J. Welfens and George Yarrow, Eds., *Telecommunications and Energy in Systemic Transformation*, Heidelberg and New York: Springer, 1997.
- "Protecting Intellectual Property by Excluding Infringing Imports: An Economist's View of Section 337 of the U.S. Tariff Act." *Patent World*, Issue 25 (September 1990): 29-35.
- Review Essay of: Jean Tirole, *The Theory of Industrial Organization*, MIT Press, 1988. *Managerial and Decision Economics*, Vol. 11 (May 1990): 131-139.
- Book Review of: J. Stiglitz and F. Mathewson eds., *New Developments in the Analysis of Market Structure*, MIT Press, 1988. *Journal of Economic Literature*, Vol. 36 (March 1988): 133-135.
- "Vertical Restraints," published in German by *Forschungsinstitut für Wirtschaftsverfassung und Wettbewerb* by E.V. Köln, Heft 5, 1984.

DISCUSSION PAPERS AND WORK IN PROGRESS

- "Towards Competition in International Satellite Services: Rethinking the Role of INTELSAT," paper distributed at OECD Ad Hoc Meeting of Experts on Competition in Satellite Services, Paris, June 1995 (with Joseph E. Stiglitz and Eric Wolff).
- "Competitive Markets in Generation: Economic Theory and Public Policy," paper presented at conference on "Electric Utility Restructuring: Whither Competition?" organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.
- "Exclusive Dealing for Rent Extraction," mimeo, January 1994 (with Serge Moresi and Francis O'Toole).
- "Option Values of Deposit Insurance and Market Values of Net Worth: Some Evidence for U.S. Banks," mimeo, December, 1992 (with Behzad Diba and Chia-Hsiang Guo).

"Do Sunk Costs Discourage or Encourage Collusion?" U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 85-10 (September 1985).

"Signalling Equilibria Based on Sensible Beliefs: Limit Pricing Under Incomplete Information." U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 84-4 (May 1984) (with Maxim Engers).

OTHER SCHOLARLY ACTIVITIES

Seminars Presented

Bellcore
Bureau of Competition Policy, Industry Canada
California State University, Hayward
Columbia University
ENSAE, Paris
Federal Trade Commission
Georgetown University
George Washington University
International Trade Commission
Johns Hopkins University
New York University
Pennsylvania State University
Simon Fraser University
Tulane University
U.S. Department of Justice
University of Alberta
University of British Columbia
University of Calgary
University of California, Davis
University of California, Los Angeles
University of Maryland
University of Montreal
University of Pennsylvania
University of Toronto
University of Virginia

Conferences: Speaker or Discussant

Economics of Interconnection Forum, Federal Communications Commission, Washington DC, May 1996
Authors' Symposium on Competition Policy and Intellectual Property Rights, Canadian Bureau of Competition, Aylmer, Quebec, May 1996
Electric Generation Association, Annual Meetings, West Palm Beach, April 1996
"Wheeling & Dealing: Opportunities and Challenges in the New Electric Industry," conference sponsored by the Center for Regulatory Studies, Illinois State University and the Institute of Government and Public Affairs, University of Illinois- Urbana, Chicago, April 1996
"New Social and Economic Approaches to a Multimedia World," OECD Symposium, Tokyo, March 1996
"Telecommunications and Energy Regulation in Transition Economies," Center for Economic Development, Bratislava, October 1995
"Electric Utility Restructuring: Whither Competition?" organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.

"New Learning on Barriers to Entry in Competition Policy," Canadian Bureau of Competition, Ottawa, March 1995
 Southeastern Economic Theory Meetings, Charlottesville, October 1994
 EARIE Conference, Tel Aviv, September 1993
 Midwest International Economics Meetings, Pittsburgh, October 1992
 Latin American Econometric Society, Mexico City, September 1992
 Conference on Industrial Organization, Carleton University, Ottawa, July 1991
 Workshop on Strategic and Dynamic Aspects of International Trade, SUNY at Stony Brook, July 1991
 AEI Conference on "Innovation, Intellectual Property and World Competition," Washington DC, September 1990
 EARIE Conference, Lisbon, September 1990
 Conference on "International Trade and Technology," Brussels and London, November 1989
 EARIE Conference, Budapest, August 1989
 Conference on Strategy and Market Structure, Dundee University, Dundee, August 1988
 Conference on "Firm Ownership and Competition," Graduate School of Business, Stanford University, June 1987
 EARIE Conference, Berlin, August 1986
 AEA Annual Meetings, Dallas, December 1984

Referee for Professional Journals

American Economic Review
Canadian Journal of Economics
Economica
Economic Journal
International Economic Review
International Journal of Industrial Organization
Journal of Business
Journal of Business Economics
Journal of Economic Dynamics and Control
Journal of Economic Theory
Journal of Economics and Management Strategy
Journal of Industrial Economics
Journal of Political Economy
Managerial and Decision Economics
Quarterly Journal of Economics
Quarterly Review of Economics and Business
RAND Journal of Economics
Review of Industrial Organization
Review of International Economics
Scandinavian Journal of Economics

Outside Evaluator—Research Proposals and Tenure & Promotion Cases

National Science Foundation
 Small Business Administration
 Several economics departments (identities disclosed on request)